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Validation of an Arabic Translation of the Functioning Everyday with a Wheelchair Self-Report Tool: A Pilot Study

Hassan I. Sarsak
Batterjee Medical College, Saudi Arabia, sarsakhassan@gmail.com

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Validation of an Arabic Translation of the Functioning Everyday with a Wheelchair Self-Report Tool: A Pilot Study

Abstract

Background: The Functioning Everyday with a Wheelchair (FEW) tool is a self-report questionnaire developed to measure consumers' perceptions of how the features of their wheeled mobility and seating device support their ability to carry out their daily functions and routines independently, safely, and efficiently.

Method: A committee of three bilingual qualified occupational therapists translated the English version into Arabic, which was verified by back translation. The final versions were administered with 26 bilingual English-Arabic speakers. The subjects were randomly assigned to answer either the English or Arabic version of the FEW questionnaire first, followed by answering the FEW questionnaire in the other language. The scores obtained were tested for agreement using the kappa statistic.

Results: We found significant substantial agreement between the scores obtained from the two versions ($p < 0.000$). The kappa measurement of agreement was 0.755 (95% confidence interval, 0.59–0.92)

Conclusion: The Arabic translation of the FEW self-report tool was generated for potential use in research and clinical practice and could be useful to wheelchair professionals who would like to use this tool for Arabic-speaking wheelchair users. Further validation of the developed Arabic version is recommended.

Comments

The author reports no potential conflicts of interest.

Keywords

Arabic, FEW, occupational therapist, self-report, translation, wheelchair user

Cover Page Footnote

I would like to give my best thanks, deepest appreciation, and gratitude for the FEW developers at the University of Pittsburgh for permission to use and translate the FEW tool in this study. We believe that translation of such a useful and important tool will have a positive significant impact on wheelchair service provision and Arabic-speaking wheelchair users. I would also like to thank our team of occupational therapists for helping in both translation and data collection. Finally, special thanks go to all wheelchair users, who are the real motivation behind all of this, for their active participation and cooperation in this study.

Credentials Display

Dr. Hassan Izzeddin Sarsak, PhD., OT

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A team of researchers at the University of Pittsburgh developed the Functioning Everyday with a Wheelchair (FEW) self-report tool (Mills et al., 2002; Mills, 2003). The FEW tool is designed to ascertain consumers' perceptions of how the features of their wheelchair support their ability to carry out their daily functions independently, safely, and efficiently. The FEW tool is a standardized questionnaire that can be used to measure self-perceived satisfaction and functional independence of wheelchair users. It could help wheelchair users to identify problems they have performing functional tasks in their daily lives while using their wheelchairs and may suggest priorities and focus areas of wheeled mobility and seating interventions. The FEW tool does not require special training and can be used to collect data as a structured interview tool that can be self-administered in 10–20 min. The FEW tool is a key component of any comprehensive wheelchair evaluation process and has been widely used in research and proved to be reliable, valid, and useful (Mills et al., 2007; Sarsak, 2018a; Sarsak, 2019; Schein et al., 2011; Schmeler, 2005).

In 2018, the Higher Council for the Affairs of Persons with Disabilities in Jordan estimated that 11%–15% of the population suffered from disabilities, amounting to over 1.1 million out of 10.3 million. The leading type of disability was for persons with locomotor disabilities who would require mobility devices (i.e., walking aids, wheelchairs) and counted for 17.3% of the total disabilities (Dupire, 2018; Thompson, 2018). The official language of Jordan is Arabic. English is spoken, especially in the cities, but to a lesser extent (Jenkins, 2011). Our literature review revealed no wheelchair functional outcome measures translated into Arabic, hence, there is a critical need for an Arabic valid and reliable wheelchair measure that can be used for clinical and research purposes. The objective of this study was to translate the FEW tool into Arabic to make it available for use in a population who does not understand English and to test whether the researchers' translation is valid and accurate and produced scores similar to the original English version.

Method

Participants

The inclusion criteria for subjects recruited for this study were (a) existing manual and power wheelchair or scooter user who had experienced a change in functional status; (b) 16 years of age or older; and (c) adequate cognitive and bilingual language status, that is, subjects would be able to understand and verbally respond to questions in both the English and Arabic versions of the FEW tool. Individuals with cognition and language impairments were excluded. Informed consent was obtained from the 26 subjects who had completed the FEW instrument; therefore, the analyses were conducted with data from those 26 subjects. The subjects were students and patients recruited from three different sites: a university, outpatient rehabilitation hospital, and general hospital. All subjects were seen and interviewed at the three sites.

Instrument and Procedure

The FEW (FEW Beta Version 2.0) tool was translated in this study from English to Arabic. The FEW tool is a 10-item structured self-report outcome measurement (see Table 1) that was developed based on input and validation from wheelchair users. The FEW tool can be self-administered, administered as an interview, or administered by telephone. Items 2–10 of the FEW tool measure perceived functional independence and satisfaction of individuals who use a wheelchair or scooter as their primary mobility and seating device and have progressive or nonprogressive conditions (Sarsak, 2018a). The items are scored using a 6-point scale of 6 = *completely agree* to 1 = *completely disagree*; a score of 0 = *does not apply*. The higher the total FEW score, the more satisfied and independent the

wheelchair user. The FEW tool enables clients to identify the degree of problems they have performing nine functional tasks in their daily lives while using their wheelchairs (manual/power wheelchair/scooter). It has excellent test-retest reliability (ICC = 0.92). In addition, the FEW tool has excellent content validity because it was generated by input from both consumers and clinicians, validated by several samples of wheelchair and scooter users, and shown to be capable of detecting users' perceived function with a wheelchair over time (Mills et al., 2002; Mills, 2003; Mills et al., 2007).

Table 1
Items of the Functioning Everyday with a Wheelchair (FEW) Tool

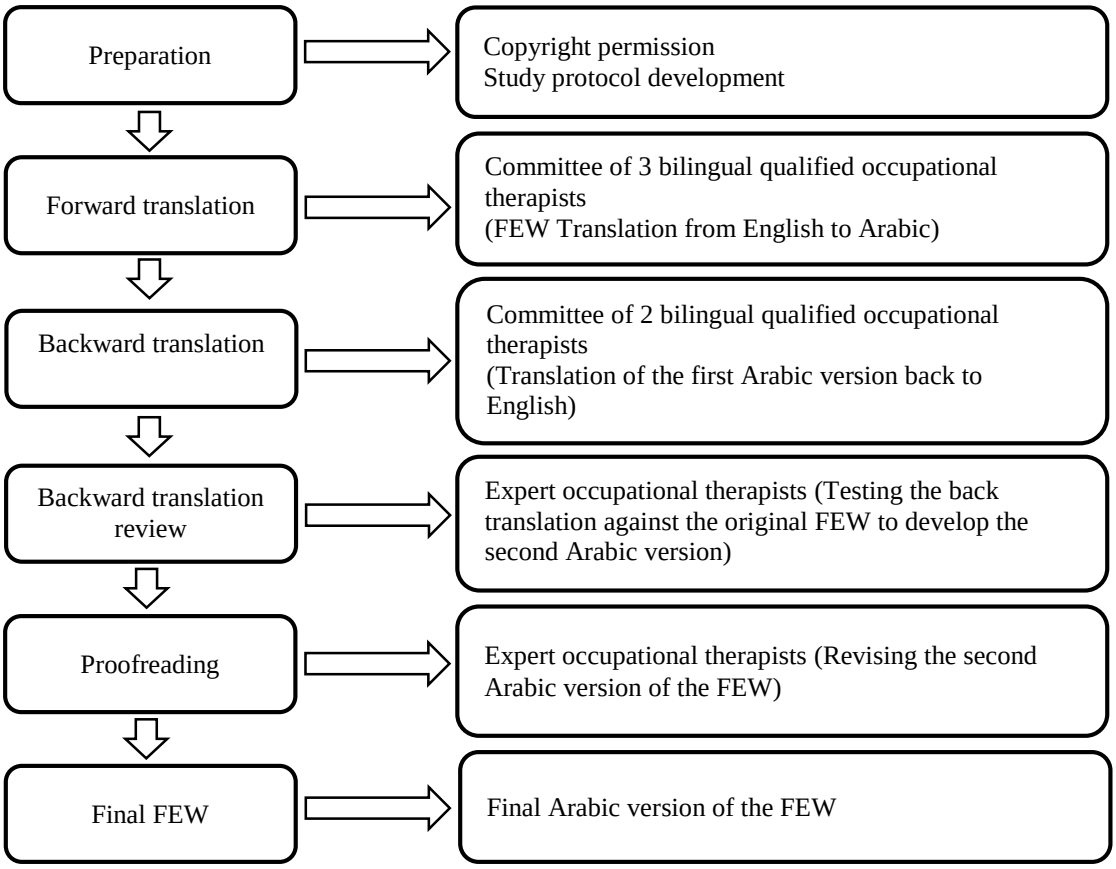
Items/tasks
1. Stability, durability, dependability
2. Comfort needs
3. Health needs
4. Operate
5. Reach
6. Transfer
7. Personal care
8. Indoor mobility
9. Outdoor mobility
10. Transportation

The back-translation method that has been recommended by researchers from various countries was used in this study (Aiyasanon et al., 2009; Bertolazi et al., 2009). A committee consisting of three bilingual qualified occupational therapists translated the English version into Arabic. The therapists were not informed about the content of the FEW tool before the translation process. The translated document was then back translated into English by two bilingual, qualified occupational therapists who were not familiar with the FEW tool's original English version. This new English translation was compared with the original FEW tool by the study investigator who has a PhD in rehabilitation science and occupational therapy to test the quality of the translation and to ensure that the intended meanings of all the items were maintained. A review of the outcome of this step led to further refinement of the Arabic version (see Figure 1). Permission to use and translate the FEW tool in this study was obtained from the developers.

The final version was tested in 26 consenting bilingual English-Arabic speakers. The subjects were randomly assigned to answer either the English or Arabic version of the FEW tool first. Once they had completed the FEW tool, it was collected and the FEW tool in the other language (either English or Arabic) was given to the subject. This ensured that the subjects had no access to previous answers when answering the FEW tool in the other language. The agreement between the two versions was assessed with the kappa coefficient, and a 95% confidence interval was constructed for kappa. The kappa coefficient was interpreted conventionally as: < 0 = poor agreement, 0–0.20 = slight agreement, 0.21–0.40 = fair agreement, 0.41–0.60 = moderate agreement, 0.61–0.80 = substantial agreement, and 0.81–1 = almost perfect agreement (Viera & Garrett, 2005). Data were analyzed using SPSS 22.0 for Windows.

Figure 1

Steps for the Translation of the Functioning Everyday with a Wheelchair (FEW) into Arabic



Results

Demographics Participants

Our study sample consisted of 26 wheelchair users with progressive or nonprogressive conditions. Thirteen were male and 13 were female. The average subject age was 37.6 years. They consisted mostly of Jordanians and had used a wheelchair for 5.7 years. Subjects with muscular dystrophy, spinal cord injuries, and traumatic brain injuries comprised over half of the sample (see Table 2).

FEW Items Translation

The FEW items were evaluated carefully by the study investigator. The backward translation review revealed no major issues in the translation. In this respect, some words were changed to retain the intended meaning.

Kappa Measurement of Agreement

The results were statistically significant ($p < 0.000$) with substantial agreement between the scores obtained when comparing the two versions of the FEW tool (English and Arabic). The kappa measurement of agreement was 0.755 (95% confidence interval, 0.59–0.92) (see Figure 2).

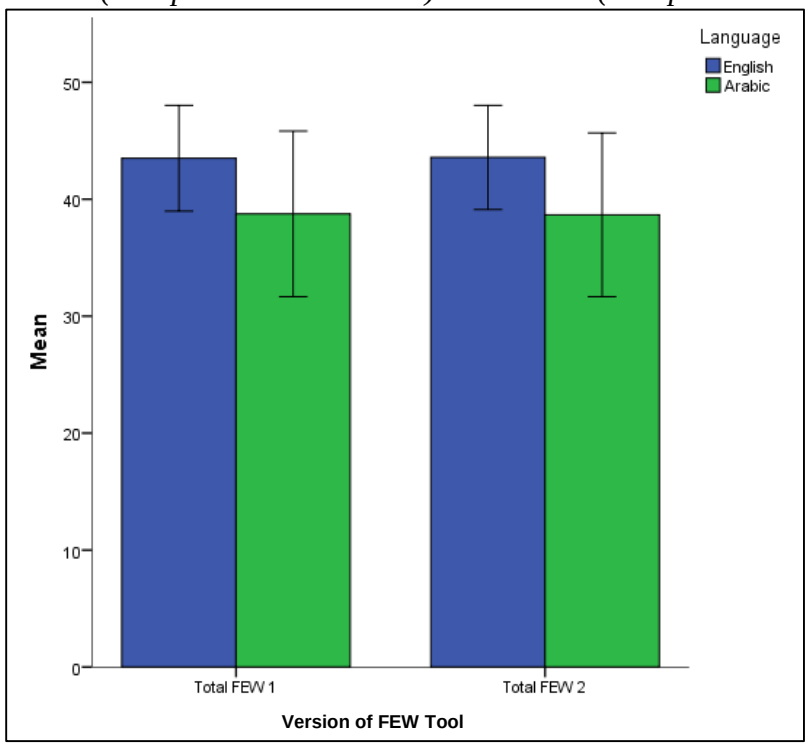
Table 2

Study Subjects' Demographics at Baseline (n = 26)

Demographics	Mean (*SD*) [range]		n
Age (mean, *SD*) [range]	37.67 (± 20.21) [16.3–75]		
Gender			
Male (n)			13
Female (n)			13
Race			
Jordanian (n)			25
Non-Jordanian (n)			1
Years using a wheelchair (mean, *SD*) [range]	5.761 [0.2–20]	(± 6.753)	
Primary medical condition			
Above knee amputation (n)			1
Cardiac disease (n)			0
Cerebral palsy (n)			2
Cerebral vascular accident (n)			4
Lupus (n)			0
Muscular dystrophy (n)			6
Multiple sclerosis (n)			0
Orthopedic disorder (n)			3
Parkinson disease (n)			0
Traumatic brain injury (n)			0
Spinal cord injury (n)			5
Other (n)			5

Figure 2

FEW 1 (Complete the First FEW) and FEW 2 (Complete the Second FEW in Another Language)



Discussion

The FEW tool is a useful outcome measure and could bring unique information to wheeled mobility, seating assessments, and interventions. The validity of the FEW tool was derived from in-depth interviews of 20 seating-mobility consumers with either static or degenerative conditions. Content validity was established with a cross-validation study of 1900 seating mobility goals from 221 consumers. The FEW items would have captured 98.45% of their goals. Test-retest reliability of responses from 32 consumers with static conditions yielded an ICC of 0.86 (Mills et al., 2002; Mills, 2003).

The FEW tool has been translated into other languages ("Hindi" Indian language [Malik et al., 2013] and "Shona and Ndebele" Zimbabwean languages [Visagie et al., 2016]) and demonstrated helpful valid and reliable data. However, it is not clear how or whether translations were validated (Visagie et al., 2016). In addition, previous studies that translated the FEW tool did not report having permission from the FEW tool developers to use and translate it (Malik et al., 2013; Visagie et al., 2016).

The current study was the first study that translated the FEW tool to the Arabic language. In addition, it was the second study that used the FEW tool in the Arab region in research after the Sarsak study (Sarsak, 2018b). Furthermore, in the current study, qualified rehabilitation professionals not only performed a rigorous translation and back translation, but also subjected this to review by expert high-profile rehabilitation specialists to ensure accuracy. Our study tested the accuracy of the translation by asking the subjects to answer the FEW tool questions in both languages with randomization as to which version (English or Arabic) was answered first. The subjects were given the second FEW questionnaire immediately after they had handed in the first one. Thus, they could not refer to their first answers. Because of the randomization and the fact that there are 10 questions with seven possibilities (the FEW tool is a 6-point scale with 6 = *completely agree* to 1 = *completely disagree*, and a score of 0 = *does not apply*), we thought that recall of the answer would not influence the results. The results were statistically significant with substantial agreement between the scores obtained in the English and Arabic FEW questionnaires. Therefore, translation of the FEW questionnaire is valid and accurate and could be useful to wheelchair professionals who would like to use this tool for Arabic-speaking wheelchair users in wheelchair evaluations.

Limitations

This study had a small sample size and a relatively homogeneous sample of experienced wheelchair users with good cognitive and language skills. For future studies, it is recommended to have a larger heterogeneous sample that includes both experienced and inexperienced wheelchair users with more diagnoses for better generalizability and representation of the wheelchair users' population.

Conclusion

The Arabic translation of the FEW self-report tool was generated for potential use in research and clinical practice. It is promising and could be useful to wheelchair professionals who would like to use this tool for Arabic-speaking wheelchair users. Further validation of the developed Arabic version is recommended and planned.

Clinical Resources

1. English version: Functioning Everyday with a Wheelchair (FEW). Holm, Mills, Schmeler and Trefler. http://www.few.pitt.edu/few_doc/few_final.pdf.
2. Arabic version: Available on request from the author.

***Dr. Hassan Izzeddin Sarsak, PhD., OT**, received his doctorate in rehabilitation sciences and occupational therapy from the University of Pittsburgh, PA, and he is currently the head of the occupational therapy program at Batterjee Medical College, Saudi Arabia.*

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